

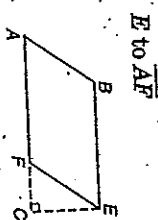
Study Guide

Parallels and Distance

The shortest segment from a point to a line is the perpendicular segment from the point to the line.

Distance Between a Point and a Line	The distance from a line to a point not on the line is the length of the segment perpendicular to the line from the point.
Distance Between Parallel Lines	The distance between two parallel lines is the distance between one of the lines and any point on the other line.

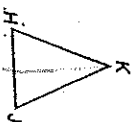
Example 1: Draw the segment that represents the distance indicated.



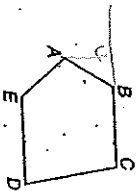
EC represents the distance from E to AF.

Draw the segment that represents the distance indicated.

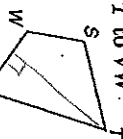
1. K to \overleftrightarrow{HJ}



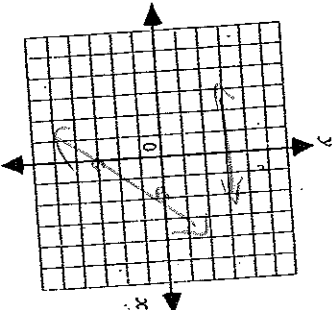
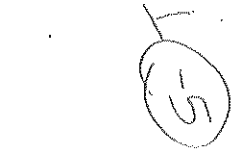
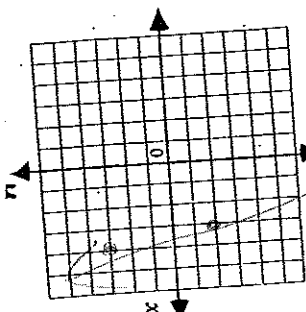
2. A to \overleftrightarrow{BC}



3. T to \overleftrightarrow{WV}

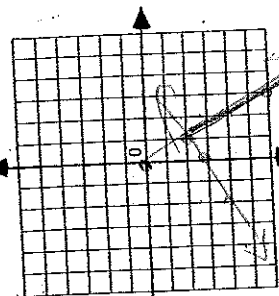


Sketch the line passing through (3,2) and \perp to the line containing (-4,7) (1,8) $8-7=1$
 $1+4=5$



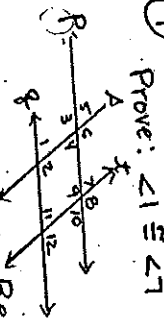
Graph: $12y = 3x - 6$
 $2y = \frac{1}{4}x - \frac{1}{2}$
 $y = \frac{1}{8}x - \frac{1}{4}$

Solve by factoring
 $x^2 + 7x - 18 = 0$
 $(x+9)(x-2) = 0$
 $x = -9, 2$

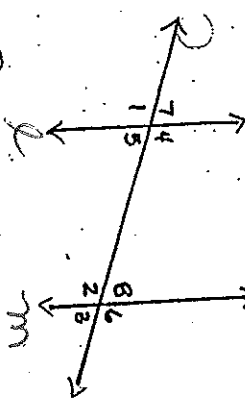


Sketch the line passing through (-3, 6) that represents the distance

Statements	Reasons
$l \parallel m$	Given
$\angle 5 \cong \angle 7$	Corresponding angles
$\angle 1 \cong \angle 5$	Transitive property
$\angle 1 \cong \angle 7$	Substitution

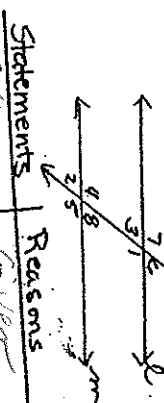


Given: $l \parallel m$
 Prove: $\angle 1 \cong \angle 7$



Given: $\angle 3$ is supplementary to $\angle 4$
 Prove: $l \parallel m$

Statements
 1. $\angle 3$ is sup to $\angle 4$
 2. $\angle 3 + \angle 4 = 180$
 3. $\angle 3 \cong \angle 8$
 4. $\angle 8 + \angle 4 = 180$
 5. $\angle 8$ is supplementary to $\angle 4$
 6. $l \parallel m$



Given: $l \parallel m$
 Prove: $\angle 6 + \angle 4 = 180$

Statements	Reasons
$l \parallel m$	Given
$\angle 6 \cong \angle 8$	Corresponding angles
$\angle 4 + \angle 8 = 180$	Linear pair
$\angle 4 + \angle 6 = 180$	Substitution

Reasons
 9. Given
 10. def of suppl
 11. vert \angle s
 12. sub
 13. def of suppl
 14. transitive

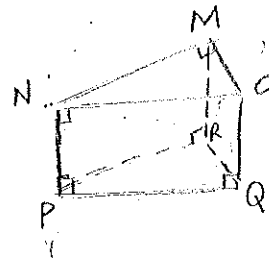
Solve by factoring
 $x^2 - 14x + 48 = 0$
 $(x-6)(x-8) = 0$
 $x = 6, 8$

Hon. Geom - Review for Test

3.1

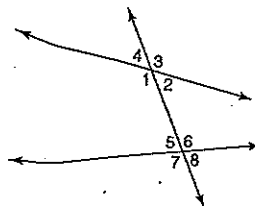
Refer to the figure in the first example.

1. Name two more pairs of parallel segments. \overline{NP} , \overline{MR} \overline{NO} , \overline{MQ}
2. Name two more segments skew to \overline{NM} . \overline{PQ} , \overline{OR} , \overline{RQ}
3. Name two transversals for parallel lines \overline{NO} and \overline{PQ} . \overline{NP} , \overline{OQ}
4. Name a segment that is parallel to plane MRQ . \overline{NP}



Identify the special name for each pair of angles in the figure.

5. $\angle 2$ and $\angle 6$ *conv int*
6. $\angle 4$ and $\angle 8$ *alt ext*
7. $\angle 4$ and $\angle 5$ *corresp*
8. $\angle 2$ and $\angle 5$ *alt int*



3.3

Find the slope of the line passing through the given points.

1. $C(-2, -4)$, $D(8, 12)$ *8/5*
2. $J(-4, 6)$, $K(3, -10)$ *-16/7*
3. $P(0, 12)$, $R(12, 0)$ *-1*

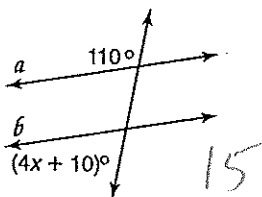
Find the slope of the line parallel to the line passing through each pair of points. Then state the slope of the line perpendicular to the line passing through each pair of points.

7. $I(9, -3)$, $J(6, -10)$ *1/3, -3/7*
8. $G(-8, -12)$, $H(4, -1)$ *11/12, -12/11*
9. $M(5, -2)$, $T(9, -6)$ *-1, 1*

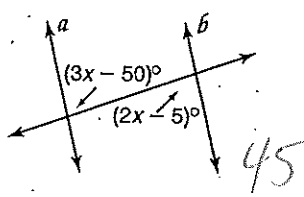
3.4

Find the value of x so that $a \parallel b$.

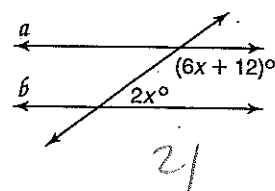
1.



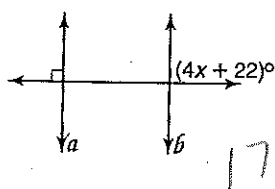
2.



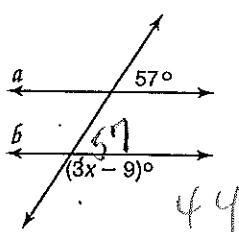
3.



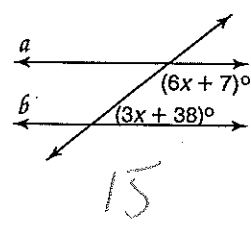
4.



5.



6.



Given the following information, determine which lines, if any, are parallel. State the postulate or theorem that justifies your answer.

7. $\angle 1 \cong \angle 8$ *c/d*

If alt ext \angle 's \cong , then lines \parallel

8. $\angle 4 \cong \angle 9$ *e/f*

If alt int \angle 's \cong , then the lines \parallel

9. $m\angle 7 + m\angle 13 = 180$ *e/f*

If consec int \angle 's supp, then lines \parallel

10. $\angle 9 \cong \angle 13$ *c/d*

If corresp \angle 's \cong , then the lines \parallel

